REMARKS

Reconsideration of the application is respectfully requested.

The examiner has rejected the claims because the subject-matter of claims 1-5, 7-11, 13 and 14 do not involve an inventive step. In particular, examiner states that these claims are rejected under 35 USC 103(a) in view of Suzzi (DE '563) and Smith (US'056)

The Suzzi reference is the primary reference. In addition to the distinction noted by the examiner (lack of a variable displacement hydraulic transmission), Suzzi also does not disclose a "closed loop hydraulic oil circuit" in the same manner as the present claimed invention. As seen in Suzzi, hydraulic oil tank (15) is part of the oil circuit. Circuit (16) provides oil to the pump (8). Pump (17) which is driven by gearbox (18) directly from the rotor (2) and suck oil from the reservoir tank (15) and fills return tube (15). As well, in cases of high hydraulic pressure, pressure control valve (21) diverts pressure through tube (24) which includes a heat exchanger to cool the fluid before returning to reservoir tank (15).

Furthermore, in Suzzi, a bypass relief valve (22) permits direct flow between tubes (11, 12), which bypasses the motor (9).

Thus, a significant proportion of the hydraulic oil flow does not flow directly from the pump (8) to the motor (9). Instead, it may bypass the motor (9) and through valve (21) return to the reservoir tank (15). This will happen in overspeed situations, which will overheat the oil dramatically, necessitating the heat exchanger in Suzzi.

In contrast, in the present invention, no such bypasses are provided or required. The hydraulic oil output from the motor acting as a pump (12) goes directly to the intake (A) of the transmission (14). Thus, the transmission (14) absorbs the entire output of the motor (12). As a result, no fluid diversion is provided.

In contrast, Suzzi requires diverting circuit (16) which includes reservoir tank (15). Thus, Suzzi does not describe a "closed loop hydraulic circuit" in the same manner as the present invention.

Claims 1, 10 and 14 have been amended to clarify this distinction. Support for these amendments may be found in the specification as filed, in Figure 2, and page 9, first paragraph. This elimination of diverting circuits is made possible by the use of a "low speed positive displacement hydraulic motor" which is driven by the rotor to act as a pump in combination with the variable displacement transmission.

The Smith reference discloses an overspeed control mechanism where the engine retarding action is lower than the driving action of the pump. This form of overspeed control is necessary if the engine retarding action is insufficient, in other words, the transmission (pump acting as a motor) cannot accept the entire output of the motor acting as a pump. In the present invention, under normal working conditions, an overspeed condition should not occur. In the present invention, the entire output of the motor acting as a pump is accepted by the transmission.

Finally, one skilled in the art would not consider it obvious to combine the teachings of Suzzi and Smith. The inventive concept in the present invention is not simply the adaptation of a hydraulic pump and motor for use in a wind turbine. The inventive concept comprises the installation of a hydraulic drive **backwards** in a wind turbine. Neither Suzzi nor Smith teach towards such a "backwards" installation.

This "backwards" installation is featured in the claims because the motor acting as a pump is a low-speed device. In order to have a direct connection between the rotor shaft and the motor, a low speed capacity was necessary. Generally, hydraulic pumps operate at a relatively high speed to create hydraulic pressure, and low-speed pumps are not common. In the present invention, the transmission which receives the hydraulic pressure has variable displacement. In the Smith reference, it is a key feature that a variable displacement pump has a pressure responsive component which varies the output of the pump.

In the present invention, this variable displacement pump having a pressure responsive component is used as the motor (referred to as transmission in the specification). In Smith, it does not matter whether or not the motor has a fixed or variable displacement, whereas in the present invention, it must be a variable displacement device.

Therefore, the Smith reference does not teach towards "backwards" installation, and certainly does not teach towards such an installation in a wind turbine. One skilled in the art would not consider to combine Smith and Suzzi to arrive at the claimed invention in this case.

Therefore, in summary, the combination of Smith and Suzzi references does not teach a wind turbine having a low speed motor acting as a pump and a variable displacement transmission acting as a motor, connected by a closed hydraulic circuit. This combination allows effective and efficient use of dynamic braking capability in an electric motor acting as a generator which then generates electricity. Claims 1, 10 and 14, and all dependent claims are therefore submitted to be novel and inventive.

CONCLUSION

In view of the foregoing remarks and amendments, it is respectfully submitted that this application is in condition for allowance and allowance thereof is respectfully requested.

Respectfully submitted,

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